Generational influence on patient learning preferences in dermatology

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Title: Generational Influence on Patient Learning Preferences in Dermatology

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To the Editor: Shared decision-making and decision aids can reduce healthcare utilization while improving patient satisfaction and adherence.[1] Little is known about patient-preferred modalities of education in dermatology to facilitate shared decision-making. Here, we examine the impact of patient characteristics, including generational status, on preferences of learning modality and information sources when making treatment decisions in dermatology.

We surveyed patients over 18 years of age at Brigham & Women's Hospital Dermatology in August 2016, asking patients to rate on a five-point scale preferences for 1) learning modalities and 2) information sources when deciding on treatment for skin growths. Patients were not required to have prior history of any skin condition and participation was optional. Demographic and clinical data were extracted from manual chart review. Generation groupings were defined as Millennials (born 1981-1997), Generation X (born 1965-1980), Baby Boomers (born 1946-1964), and the Silent Generation (born 1928-1945).[2] Participants born outside of groupings (n=6) were combined into the closest group. Responses of 5 on the five-point scale were considered "most preferred" for learning preferences while responses of 4 or 5 were interpreted as "important" for information sources based on distributions of answers. Comparisons were performed using chi-square tests, and statistical significance was determined using Cochran-Armitage trend tests. Analyses were performed using SAS 9.4 (SAS Institute, Cary, NC) and data were stored using "Research Electronic Data Capture".[3]

A total of 458 surveys were administered, of which 375 (82%) were completed. In-person discussion was the most popular learning modality (most preferred by 84.3% of participants, n=311), followed by diagrams/charts (14.5%, n=48), short handouts (11.6%, n=39), short videos

(10.4%, n=35), and phone conversation (8.1%, n=27) (Table 2). Information sources considered "important" were: recommendation from doctors (99.2%, n=370), patients' past experiences (64.7%, n=189), patients' personal preferences (55.3%, n=183), recommendations from friends/family (22.5%, n=74), and how other patients decide (22.2%, n=73). Millennials were more likely than other generations to rate personal experiences, personal preferences, recommendations from family/friends, and other patients' experiences as important ($p<0.05$).

This study identifies patient preferred learning modalities and information sources when deciding about skin growth treatment options. In-person discussion was the most popular learning modality, while phone conversation was the least. Diagrams/charts were favored over short handouts or videos and may serve as useful tools for future decision aids.

There was an age-dependent valuing of non-physician peer-driven experiences by younger generations (Millennials > Generation X > Baby Boomers/Silent Generation), reflecting emphasis on connectivity (e.g. social media) and consumer-driven reviews/experiences (e.g. Yelp) by younger generations. Although in-person consultation is currently preferred by patients, these findings suggest that the presence of peer-driven ratings of physicians, hospitals, and even medical procedures available online may increasingly influence patient decision-making over time.[4] Future education efforts may benefit from harnessing social media.

Our findings are limited by a potential lack of generalizability and by differences in demographic/clinical variables between generations that may impact preference differences.

However, we believe that our study offers insight into patient decision-making, informing future efforts for decision aids and shared-decision making.

Abbreviations and acronyms: None

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89 Table 1: Participant characteristics by generation

	Overall n=375	Millennials n=101	Generation X N=77	Baby Boomers & The Silent Generation N=197	p-value
Age, mean (SD)	51.4 (18.9)	27.2 (4.8)	43.5 (4.9)	67.3 (8.7)	--
Female, n (%)	229 (61.1)	70 (69.3)	48 (62.3)	111 (56.3)	0.091
Insurance, n (%)					
Private	231 (61.6)	84 (83.2)	64 (83.1)	83 (42.1)	<0.001
Medicare	93 (24.8)	0 (0.0)	2 (2.6)	90 (45.7)	
Medicaid	46 (12.3)	14 (13.9)	11 (14.3)	21 (10.7)	
Self-insured/self-pay	4 (1.1)	2 (2.0)	0 (0.0)	2 (1.0)	
Other/unknown	1 (0.3)	0 (0.0)	0 (0.0)	1 (0.5)	
Prior diagnosis of skin cancer/cancer precursor*	159 (42.4)	10 (9.9)	20 (26.0)	129 (65.5)	<0.001
Dermatology visits in past 5 years, n (%)					
0-2	79 (21.1)	32 (31.7)	20 (26.0)	27 (13.7)	<0.001
3-5	105 (28.0)	32 (31.7)	24 (31.2)	49 (24.9)	
> 5	191 (50.9)	37 (36.6)	33 (42.9)	121 (61.4)	
Skin biopsies in past 5 years, n (%)					
0-2	329 (87.7)	96 (95.0)	71 (92.2)	162 (82.2)	0.004
3-5	35 (9.3)	5 (5.0)	6 (7.8)	24 (12.2)	
> 5	11 (2.9)	0 (0.0)	0 (0.0)	11 (5.6)	

90 *melanoma (lifetime), keratinocyte skin cancer (lifetime), and actinic keratosis (lifetime)

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Table 2: Most preferred learning preferences and most important sources of information about decisions for skin growth treatment

Learning Preferences	All respondents		Millennials		Generation X		Baby Boomers & The Silent Generation		
	No.	n (%) most preferred*	No.	n (%) most preferred	No.	n (%) most preferred	No.	n (%) most preferred	p-value
In-person	369	311 (84.3)	100	77 (77.0)	76	64 (84.2)	193	170 (88.1)	0.014
Diagrams/charts	332	48 (14.5)	98	21 (21.4)	72	8 (11.1)	162	19 (11.7)	0.042
Short handouts	337	39 (11.6)	97	10 (10.3)	73	4 (5.5)	167	25 (15.0)	0.17
Short videos	336	35 (10.4)	98	7 (7.1)	71	4 (5.6)	167	24 (14.4)	0.043
Phone	335	27 (8.1)	98	8 (8.2)	72	5 (6.9)	165	14 (8.5)	0.89
Information Sources	No.	n (%) important†	No.	n (%) important	No.	n (%) important	No.	n (%) important	p-value
Doctors	373	370 (99.2)	100	99 (99.0)	77	76 (98.7)	196	195 (99.5)	0.60
Past experiences	292	189 (64.7)	88	64 (72.7)	58	38 (65.5)	146	87 (59.5)	0.041
Personal preferences	331	183 (55.3)	99	64 (64.6)	72	42 (58.3)	160	77 (48.1)	0.008
Friends/family	329	74 (22.5)	99	33 (33.3)	72	17 (23.6)	158	24 (15.2)	<0.001
Other patients	329	73 (22.2)	98	31 (31.6)	72	18 (25.0)	159	24 (15.1)	0.002

p-value from Cochran-Armitage trend tests

* most preferred = 5

† important= 4 or 5